What is claimed is:

1. A method of monitoring and restoring a communications network, comprising the steps of:

receiving a data stream encoded with a transmission code;

decoding the data stream to determine a performance metric based on a number of transmission code violations; and

restoring the performance of the network in response to the performance metric.

2. The method of claim 1, including the step of:

generating an error rate based on the number of transmission code violations for use as the performance metric.

3. The method of claim 1, including the step of:

generating a switch signal in response to the performance metric exceeding a predetermined value.

4. The method of claim 3, including the step of:

transferring the data stream from a first link to a second link in response to the switch signal.

5. The method of claim 2, wherein the step of generating an error rate includes the step of:

dividing a number of transmission code violations by a predetermined period of time.

6. The method of claim 2, wherein the step of generating an error rate includes the step of:

dividing a number of transmission code violations by a predetermined number of data frames.

7. A system for monitoring and restoring a communications network, comprising:

a first network element, comprising:

a transmitter having an encoder coupled to receive a data stream, the encoder for encoding the data stream with a transmission code;

a switch coupled to receive the encoded data stream from the transmitter, the switch coupled to a switch signal for switching the encoded data stream from a first link to a second link;

a second network element coupled to the first network element via the first and second links, comprising:

a receiver having a decoder coupled to receive the encoded data stream from the first network element, the decoder for decoding the encoded data stream and determining a number of transmission code violations; and

a monitoring module coupled to receive the number of transmission code violations from the receiver, the monitor module for determining a performance metric based on the number of transmission code violations, and for providing a switch signal to the switch in the first network element if the performance metric exceeds a predetermined value.

8. The system of claim 7, wherein the performance metric is an error rate determined from the number of transmission code violations.

9. The system of claim 7, wherein the transmission code is an 8B/10B code.

10. The system of claim 7, wherein the transmission code is an 4B/5B code.

11. The system of claim 7, wherein the communications network is a Gigabit Ethernet.

12. The system of claim 7, wherein the switch signal is coupled to a third network element in a second communications network.